

# SEMINAR

## **Toward improving parameterizations of jet/front gravity waves associated with idealized moist baroclinic waves**

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### **Abstract:**

This presentation introduces the characteristics, sources, dynamics and impacts of the gravity waves generated in the moist baroclinic jet-front systems. Firstly, a series of high-resolution cloud-permitting simulations of idealized moist baroclinic waves are performed to study gravity waves among moist baroclinic jet-front systems with varying degree of convective instability, to examine the similarities and differences of wave characteristics, initiations and propagations among different simulations, and to understand the coupling and interactions of gravity waves with small-scale moist convection and large-scale background baroclinic waves. Secondly, four-dimensional linear ray-tracing experiments are employed to investigate the source mechanisms, propagating characteristics, life cycles, and wavenumber vector refraction budget analysis of the identified lower-stratospheric gravity waves. Thirdly, spectral characteristics are estimated with discrete Fourier transform to assess the wave-induced momentum fluxes and their impacts on the large-scale circulation. Understanding the dynamics, propagations and impacts of these gravity waves may ultimately help us with better parameterizations of gravity waves associated with moist baroclinic jet-front systems

Date: **Wednesday**, May 13  
Time: 3:15pm refreshments  
3:30pm seminar  
FL-1022, Large Auditorium  
(**Please note day**)

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